UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO THE ATTENTION OF:
5WD-TUB-9

DEC 10 1986

MEMORANDUM

SUBJECT: Antidegradation Policy and Implementation Procedures

FROM: Charles H. Sutfin
Director, Water Division

TO: Region V State Water Program Directors

In mid-October, we submitted the October 6, 1986, Draft Region V "Guidance for Antidegradation Policy Implementation for High Quality Waters" to Headquarters EPA as an alternative to Headquarters draft guidance. This is the same guidance which was sent to your agencies on October 9 for State comment.

After much discussion and deliberation, Headquarters has chosen to withdraw their draft guidance, and has sent us the attached memorandum concurring with the Regional guidance.

My staff has also reviewed the State comments, and we have incorporated some adjustments and clarifications into the Region's final Guidance in response to some of these comments. A summary of State comments and the Regional responses is attached for your information, as is a copy of the final Guidance.

We are now at the point where we must move forward in earnest. This will entail two major actions on the part of individual States. The first is to carefully review the State Antidegradation Policy and ensure that it is fully consistent with Federal requirements. This should be a joint State - EPA review and should be completed by mid-year. Where deficiencies are identified, proposed new language should be developed and the adoption process initiated by the end of FY'87. The goal is to have a fully acceptable antidegradation policy in place in all States by mid-year of FY'88.

The second major action is development of State implementation procedures consistent with the Regional guidance. Region V will provide as much assistance as possible in this process, and is willing to participate in multi-state workgroups if the States so desire. We expect that the States will have at least draft procedures by the end of FY'87, and fully approvable and implementable procedures in place by mid-year of FY'88.

In the interim, while States are developing their own detailed procedures, and revising their water quality standards as needed, the Region will review State actions which affect water quality based on the Regional guidance, and consistent with the State water quality standards currently in effect.

The development of full-scale implementation of antidegradation is a key component of environmental protection, and we are fully committed to seeing it through to a successful conclusion. Many of your staff have contributed valuable time and excellent ideas to the development of the Regional guidance, through water quality workgroup meetings, comments, and conversations. We believe the result is a fair and flexible guidance document, and we look forward to a cooperative implementation effort.

Attachments

cc: V. Adamkus, 5RA
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ANTIDEGRADATION RESPONSE SUMMARY

INTRODUCTION

1. Comment: "High Quality Waters" should be defined on a much more selective basis than as any water which exceeds the applicable water quality standards. (IL)

   Response: The regulation does not allow for a selective definition of "high quality waters." Headquarters has previously addressed this issue in the guidance entitled "Questions and Answers on: Antidegradation."

2. Comment: The list of nonpoint source activities should recognize the absence of regulatory control over some of these activities. (WI, MI, IN)

   Response: The guidance has been modified by adding the following wording: "Where nonpoint source activities are not currently permitted, or otherwise regulated through water quality protection plans, it may not be feasible at this time to develop antidegradation procedures for them, or to apply antidegradation policy to them." In addition, the guidance now better reflects the developmental stage of nonpoint source regulation by stating the "the State should also plan to develop procedures for assessing nonpoint source activities that lower water quality", rather than requiring development at this time.

   Similarly, on page 3, the guidance now encourages, rather than requires, the State to develop a public notification process for nonpoint source activities that would lower water quality but which do not now have public notification requirements.

   These modifications are not intended to exempt the State from proper application of antidegradation policy to nonpoint source activities; they are intended to better reflect the current status of nonpoint source regulation.

APPLICATION OF ANTIDEGRADATION POLICY TO NPDES PERMITS

3. Comment: EPA promulgation of categorical effluent limits should be recognized in the antidegradation guidance. (WI)

   Response: Categorical effluent limits define the minimum effluent quality for industrial dischargers, but do not supersede water quality standards requirements, of which antidegradation is a part. As noted in Part II C of the guidance, the Federal antidegradation policy requires a demonstration that lowering water quality is "necessary to accommodate important economic or social development

in the area in which the waters are located." The policy makes no distinction between lowering water quality in effluent limited waters and lowering it in water quality limited waters. The promulgation of categorical effluent limits therefore has no effect on antidegradation implementation per se. Its only potential effect is to change the end point beyond which effluent limits can no longer be relaxed for any reason.

4. Comment: The tracking of cumulative impacts of "insignificant" changes in water quality as well as the establishment and updating of "water quality baselines" may be resource intensive. (IL)

   Response: The Region has reconsidered the requirement that State implementation procedures contain a mechanism for keeping track of the cumulative impacts of insignificant changes in water quality. Recognizing that there is only a small likelihood that multiple or repeated insignificant changes will significantly lower water quality, the tracking mechanism requirement has been deleted. However, the State should be prepared to respond appropriately if such circumstances arise.

5. Comment: EPA guidance should address situations where required information for demonstrating "important economic and social development in the area" is lacking and determinations on the need for social and economic development are not possible. Does EPA intend that the permit request or modification be denied where information is lacking? (WI)

   Response: A complete absence of information should lead to denial of a permit or modification request. However, it seems highly unlikely that the discharger or the State would be unable to obtain any pertinent information. The Region does recognize that precise or detailed economic and social information may not always be available, and that the State will have to exercise professional judgement in accepting demonstrations based on reasonable estimates derived from existing data sources.

6. Comment: EPA should either promulgate nationwide criteria to define "significant" change in water quality or else defer to the judgement of the delegated states provided that programs are administered consistent with the Clean Water Act and regulations promulated thereunder. Having a Regional "veto" power over a subjective issue such as antidegration causes us great concern. (MI)

   Response: U.S. EPA Headquarters will not be issuing nationwide criteria to define a "significant" change in water quality. The Region purposely proposed to leave the definitions up to the States in the interest of flexibility. However, the Region is committed to ensuring reasonable equivalence among the State approaches. This is a compromise between uniformity and flexibility.

7. Comment: The stringency of economic and social analyses should not depend on the economic status of the community. (MI)

   Response: While it is true that the environmental value of a resource is not a function of the economic status of the affected community, it is also true that the community's ability to absorb the cost of maintaining water quality is likely to be a function of economics. The "public interest" condition was intended to provide a mechanism for overriding strictly economic demonstrations where unusual circumstances exist (e.g., a particularly valuable water resource in an economically depressed area). Nevertheless, in order to avoid the inference that resources in economically depressed areas are inherently less valuable than those in economically healthy areas, the direct tie between economic status and the stringency of economic and social analyses has been deleted.

8. Comment: The effort needed to develop the information to meet the public notice requirements may be excessive. (MI, OH)

   Response: The usefulness of a public notice is directly related to the completeness of the facts it makes available. The Region believes that the nine items listed are necessary information to which the public must have access. In the interest of practicality and cost-containment, the guidance does allow the public notice to address the antidegradation issue by reference.

9. Comment: It is premature to apply antidegradation to parameters not limited in NPDES permits because they are below the level of concern. (MI)

   Response: Antidegradation policy implementation is intended to "maintain and protect" high quality waters, i.e., those waters whose quality is now better than that required by fishable/swimmable standards. Consistent implementation of this policy therefore requires that it be applied to all substances, before they become a problem. The intent of pollution control in general is preventative, not remedial; this is particularly true for the maintenance and protection of high quality waters.

10. Comment: EPA guidance should state that introduction of new effluent limits into a permit for parameters not previously covered should not be subject to antidegradation in cases where effluent quality has not changed. (WI)

    Response: This topic is now addressed in Section II E, Deriving Effluent Limits: "When new effluent limits are added into an existing permit for parameters not previously limited in that permit, and the effluent quality has not changed, an antidegradation demonstration is not necessary. The proposed limit should reflect the effluent quality achieved by the facility."

11. Comment: The EPA guidance should recognize that State staffing for antidegradation evaluations may be limited. (WI)

    Response: Staffing limits would best be addressed in the State's implementation procedures.

OTHER ANTIDEGRADATION CONSIDERATIONS

12. Comment: EPA guidance on antidegradation does not recognize cross-media effects. How should risk assessment determinations and "environmental trade-offs" be combined with antidegradation analysis? (WI)

    Response: The Region recognizes that cross-media effects may be an essential component in some antidegradation determinations. Since a basic principle of environmental protection is to minimize adverse environmental effects in all media, the Region recommends that State antidegradation procedures should at least identify the need to determine relative environmental impacts across media, and eventually establish systematic procedures for doing so.

    This subject has been added to the Regional guidance.

13. Comment: Would a demonstration of need be required of a discharger proposing a new or increased discharge to an ONRW? (MI)

    Response: In the rare instance where a new or increased discharge to an ONRW could be considered, the discharger would have to demonstrate social or economic need since some local degradation is to be expected, even though the overall water quality of the receiving waters is maintained and protected.

REGION V

GUIDANCE FOR ANTIDEGRADATION POLICY IMPLEMENTATION

FOR HIGH QUALITY WATERS

DECEMBER 3, 1986

TABLE OF CONTENTS

INTRODUCTION

All States must have antidegradation policy language consistent with 40 CFR 131.12 in their water quality standards, and appropriate implementation procedures. This document is intended to provide guidance to the States in formalizing their own antidegradation policy implementation procedures. It also serves as the Regional benchmark for evaluating antidegradation policy issues related to Regional reviews of NPDES permits, wasteload allocations, or other actions which could lower water quality.

The Region recommends that State procedures be developed in such a way that dischargers contribute appropriately to meeting the antidegradation requirements. It is expected that required information and demonstrations will be developed primarily by the discharger(s) requesting a lowering of water quality.

The antidegradation policy in 40 CFR 131.12 requires that uses be protected. Since uses are protected by water quality criteria, any application for less stringent effluent limitations, increased discharge loads, or new discharges, may be considered only if the quality of the receiving waters exceeds the water quality standards.

The Federal antidegradation policy further specifies that State antidegradation policy and implementation methods will, at a minimum, maintain and protect water quality "where the quality of the waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water". Federal policy does not limit the antidegradation policy; therefore, any action which would result in a lowering of water quality in high quality waters is potentially subject to antidegradation policy implementation. This includes, but is not limited to, the following types of point source circumstances:

1. industrial production increases,

2. new discharger or source,

3. municipal growth,

4. reallocation of abandoned load allocations,

5. modeling revisions, and

6. correction of wasteload allocation errors.

The basic principle is that the same kind of protection is to be applied to all unused assimilative capacity (the increment in water quality above that required to meet standards).

Altnough the following guidance focuses on the application of the antidegradation policy to NPDES permits, the state should also plan to develop procedures for assessing nonpoint source activities that lower water quality. They include, but are not limited to, the following:

- changes in agricultural activities;
- changes in silvicultural activities;
- changes in mining activities;
- urban development;
- removal of BMPs;
- discharge of dredged and fill materials (e.g., §402 and §404 permits);
- §401 certifications;
- §208, §303(c), and water quality management plan approvals;
- resource management plan approvals;
- land management (e.g., forest) plan approvals; and
- RCRA/CERCLA actions that affect water quality.

For nonpoint source activities that currently require public notification, the information contained in Section II-D below must be part of the public notification process. A discussion of the requirements with regard to

Sections 401 and 404 permits is contained in Section III-C. For the other activities that currently do not require public notification, the State should develop a process to ensure that public notification is provided for those activities that would lower water quality. This will ensure that the public is afforded the opportunity to comment on all actions that lower water quality.

Where nonpoint source activities are not currently permitted, or otherwise regulated through water quality protection plans, it may not be feasible at this time to develop antidegradation procedures for them, or to apply antidegradation policy to them.

I. ANTIDEGRADATION AND WATER QUALITY STANDARDS

Application of the antidegradation policy assumes that the water quality standards have been appropriately set for waterbodies where water quality will be lowered. Where the standards themselves are questionable, it will be necessary to review, and if appropriate revise, the standards.

II. APPLICATION OF ANTIDEGRADATION POLICY TO NPDES PERMITS

Implementation of antidegradation policy for NPDES permits is a four step process. The first step is to determine whether the proposed action is eligible for consideration, as described in Section A. The second step is to determine if the eligible proposed action would cause a significant lowering of water quality (Section B). If the predicted change in water quality is insignificant, then no further "tests" are required. Where the proposed action would significantly lower water quality, then the third step involves a demonstration that lowering water quality is necessary to accommodate important economic and social development in the area (Section C). Section D addresses the public participation and intergovernmental cooperation elements of the antidegradation policy. Where the documentation for a permit issuance/reissuance/modification does not

provide adequate evidence of State antidegradation policy implementation, the Region may object to the proposed permit.

It should be noted that some actions affecting NPDES permits (i.e., relaxation of existing permit limitations) may be subject to the antibacksliding rule. Antibacksliding requirements are found at 40 CFR §122.44(1) of USEPA's NPDES regulations. Application of antibacksliding is separate from implementation of the antidegradation policy.

A. Eligibility Requirements

Before any permit action which might lower water quality is considered, it must first be demonstrated that two conditions are met:

1. water quality exceeds that necessary to meet standards, and
2. proposed effluent limitations will not result in violations of water quality standards.

This applies to proposed new dischargers, existing dischargers with anticipated influent or production increases, and existing dischargers without influent or production increases. For proposed new dischargers, it must also be demonstrated that the new facility proposes to build appropriate treatment, or apply BMP's.

B. What Constitutes "Lowering of Water Quality"?

Questions have arisen concerning the definition of "lowering of water quality". In a practical sense, the question is whether an increased pollutant load constitutes a lowering of water quality even if the increase is so small that no significant change in water quality can be demonstrated.

In the strictest sense, the answer is yes, but this must be tempered with practical considerations to ensure that scarce pollution control resources are used judiciously. Consequently, the Region will

consider that antidegradation requirements have been satisfied where it is demonstrated that there will be no significant lowering of water quality.

The definition of a "significant" change will be left up to individual States, subject to Regional approval.

The State could for example, set an absolute or percent change in predicted ambient conditions which would be considered "insignificant". It is expected that the designated cutoff would be different for different categories of substances, i.e., it would be smaller for persistent or carcinogenic substances than for nonpersistent substances. The basis for the cutoff would need to be justified. Proposed changes in technology-based limits on effluent limited waters could be converted to mass-balance or similar calculations for use of the percent cutoff approach.

The above substance specific alternatives do not address the possibility of additive or synergistic effects, however. Therefore, the discharger may have to submit results from appropriate bioassay(s) to demonstrate that such interactions will not inadvertently result in toxicity in the receiving waters.

The approach or approaches which the State proposes to use should be fully documented and justified in its antidegradation policy implementation procedures.

If the State chooses to establish de minimis tests, due consideration must also be given to the possibility that repeated or multiple "insignificant" changes could cumulatively cause significant changes in water quality.

C. Demonstration of "Important Economic or Social Development in the Area"

The Federal antidegradation policy requires a demonstration that lowering water quality is "necessary to accommodate important economic or social development in the area in which the waters are located". This demonstration is not intended to be of the same magnitude or stringency as the "widespread social and economic impact" test for variances and downgradings of use designations.

The Region recognizes that the definition of "important" development needs to be flexible to accommodate differences in State circumstances. In the interest of flexibility, the Region is therefore defining only the minimum economic/social demonstration considered acceptable for purposes of antidegradation policy implementation. To meet the minimum requirements, the discharger must demonstrate to the satisfaction of the State pollution control agency and Region V that lowering of water quality is necessary to accommodate:

1. new production by a new discharger; or
2. industrial production which cannot be accommodated by the current treatment facility while maintaining consistent compliance with current effluent limits even though the current facility is appropriate and is optimally maintained and operated; or
3. increased loading to a municipal wastewater treatment plant because of community growth, which cannot be accommodated by the current treatment facility while maintaining consistent compliance with current effluent limits even though the current facility is appropriate and is optimally maintained and operated; or

4. other circumstances deemed analogous to 1-3.

After identifying any such increased production or population growth in the area in which the waters are located, the State must make a specific finding that such increased production or growth is necessary for important social and economic development.

Consistent compliance with effluent limits is defined as 99 percent compliance with daily maxima, and 95 percent compliance with monthly averages. If consistent compliance can be maintained, then lower water quality is not "necessary", and is therefore not permissible. Where a discharger claims that consistent compliance cannot be maintained, it must also be determined that the treatment facility is appropriate, and is optimally operated and maintained. Inappropriate facilities or mediocre operation and maintenance are not acceptable justification for lowering water quality.

However, a facility may be considered for relaxed permit limits if the discharger achieves consistent compliance through extraordinary means, such as disproportionate operation and maintenance costs for best professional judgment (BPJ) limitations, or production shutdown during critical wasteload allocation periods.

In addition to the factors listed above, the State should consider whether the potential lowering of water quality is in the public interest. The addition of this "public interest" condition provides the mechanism whereby the State pollution control agency can override an approval based on 1-4 above, if there is a compelling public opinion or environmental reason to do so.

The States are strongly encouraged to implement more stringent criteria for defining "necessary economic and social development".

A more extensive economic analysis could require the discharger to demonstrate the extent to which the proposed decrease in water quality would create an increase in economic or social development, and why the change in water quality is necessary to achieve such development. A discharger could, for example, document expected growth in the following factors:

- area employment,
- direct and indirect income, and/or
- the community tax base.

Alternatively, this step could also be addressed by demonstrating the negative economic or social effects of the additional cost necessary to maintain existing water quality, e.g., land treatment or advanced treatment.

D. Public Participation and Intergovernmental Cooperation

Public participation and intergovernmental cooperation are essential elements of antidegradation policy implementation. Potential participants must explicitly be made aware of antidegradation policy issues and the potential impact of any lowering of water quality.

To this end, the Region recommends that any public notice related to potential lowering of water quality should address, or contain explicitly reference the availability of documents which address, at least the following topics:

1. statement of the State's antidegradation policy;
2. specific identification of substances for which effluent limit relaxation is being proposed;

3. description of the current level of water quality;
4. description of the impact that the proposed action will have on water quality;
5. summary of other actions that have lowered water quality and determination of cumulative impacts;
6. de minimis test justification (if appropriate);
7. important social and economic development demonstration in support of effluent limit relaxation or new discharge (if appropriate);
8. type of substance involved (e.g., threshold/non-threshold, persistent/nonpersistent) and known and suspected environmental effects; and
9. identity of other appropriate agencies which have been notified of the proposed action.

While formal notice of intent to authorize degradation of existing water quality is required only at the time an NPDES permit is public noticed, it is both advisable and prudent to inform interested and affected parties as early in the process as possible.

E. Deriving Effluent Limits

In those cases where relaxed effluent limitations are justified, or where limits are being derived for a new discharger, the permit writer must set appropriate effluent limitations. In practice, proposed effluent limits will actually be derived prior to starting the anti-degradation eligibility procedures. Whatever the precise sequence of events, the limits finally incorporated into the proposed permit must reflect the effluent quality achievable by the facility. This

principle is already articulated in several places in the Federal regulations for various circumstances: 40 CFR 122.62(a)(17), 40 CFR 122.44(l)(2)(i), and 40 CFR 133.105(f).

When new effluent limits are added to an existing permit for parameters not previously limited in that permit, and the effluent quality has not changed, an antidegradation demonstration is not necessary. The proposed limit should reflect the effluent quality achieved by the facility.

F. Antidegradation Implementation Without Numerical NPDES Limits

NPDES permits do not routinely contain numerical limits for all of the substances found in a discharger's effluent. Nevertheless, all substances are subject to antidegradation policy implementation, whether or not they are specifically limited in the permit. To apply antidegradation to substances not currently limited in a permit, the State can utilize the notification procedures specified in 40 CFR 122.42, requiring dischargers to notify the State pollution control agency of any actual or anticipated change in effluent characteristics, as compared with those existing at the time the permit was issued.

Processing a request for increased discharge through the notification procedure is essentially the same as processing a request for relaxed permit limits. The only significant difference is that an actual permit modification may not be required. All other requirements must be met, including those for public participation and intergovernmental cooperation.

III. OTHER ANTIDEGRADATION CONSIDERATIONS

A. Applicability of Antidegradation to All Chemical Pollutants

Antidegradation is applicable to all chemical pollutants, even though there is a substantial variation in physical, chemical, and biological properties among chemical pollutants, because there are environmental benefits to be gained from water quality better than the minimum prescribed by water quality standards, for all categories of chemicals.

For example, by definition, threshold chemicals are believed to not elicit "unacceptable" effects until some critical (threshold) concentration is exceeded. However, the absence of "unacceptable" effects does not preclude the occurrence of "adverse" effects at, and possibly even below, the threshold (Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses, USEPA, Draft, March 4, 1985).

Nonconservative chemicals can also have more impact than their temporary nature might imply. BOD loadings, for instance, have an inverse proportional effect on dissolved oxygen, which itself may have a continuous direct relationship to the quality of aquatic life.

For conservative chemical pollutants, the benefits are self-evident. A conservative chemical will persist in the environment for a long time, if not indefinitely; continued loading of conservative chemicals is therefore likely to result in accumulation. The potential for accumulation to deleterious levels is evident, and is the basis for minimizing the discharge of such substances, wherever possible.

Non-threshold chemicals by definition, have no safe level. This category includes many of the carcinogens, mutagens, and teratogens. States are urged to apply more stringent antidegradation criteria to this category of chemicals.

B. Categories of State Waters

The Federal antidegradation policy specifies that the water quality of outstanding National resource waters (ONRW's) shall be maintained and protected. There are no exceptions permitted in this case; water quality may not be degraded under any circumstances.

The Region recognizes that some waters in each State may have special resource values which should be afforded a level of protection beyond that required state-wide for high quality waters, but not as stringent as for ONRW's. The States are therefore encouraged to create an intermediate category with an appropriate level of protection.

C. Nonpoint Sources and Clean Water Act Sections 401 and 404

As part of the requirement that high quality waters be maintained and protected, the Federal antidegradation policy stipulates that the States shall achieve all cost-effective and reasonable best management practices for nonpoint source control. This provision makes it the State's responsibility to work towards nonpoint source control, and to ensure that Section 401 certifications and Section 404 permit issuance take antidegradation policy into consideration. These subjects should be addressed in the State's implementation procedures.

D. Cross-Media Effects

The Region recognizes that cross-media effects may be an essential component in some antidegradation determinations. Since a basic

principle of environmental protection is the minimization of adverse environmental effects in all media, it is recommended that the State antidegradation procedures should at least identify the need to determine relative environmental impacts across media, and eventually establish systematic procedures for doing so.